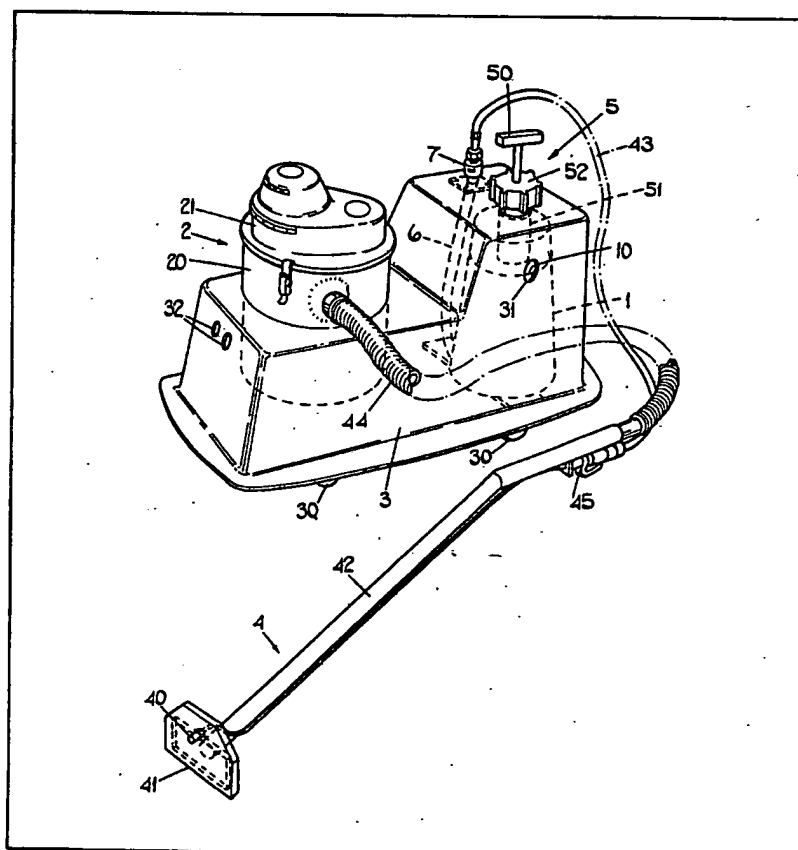
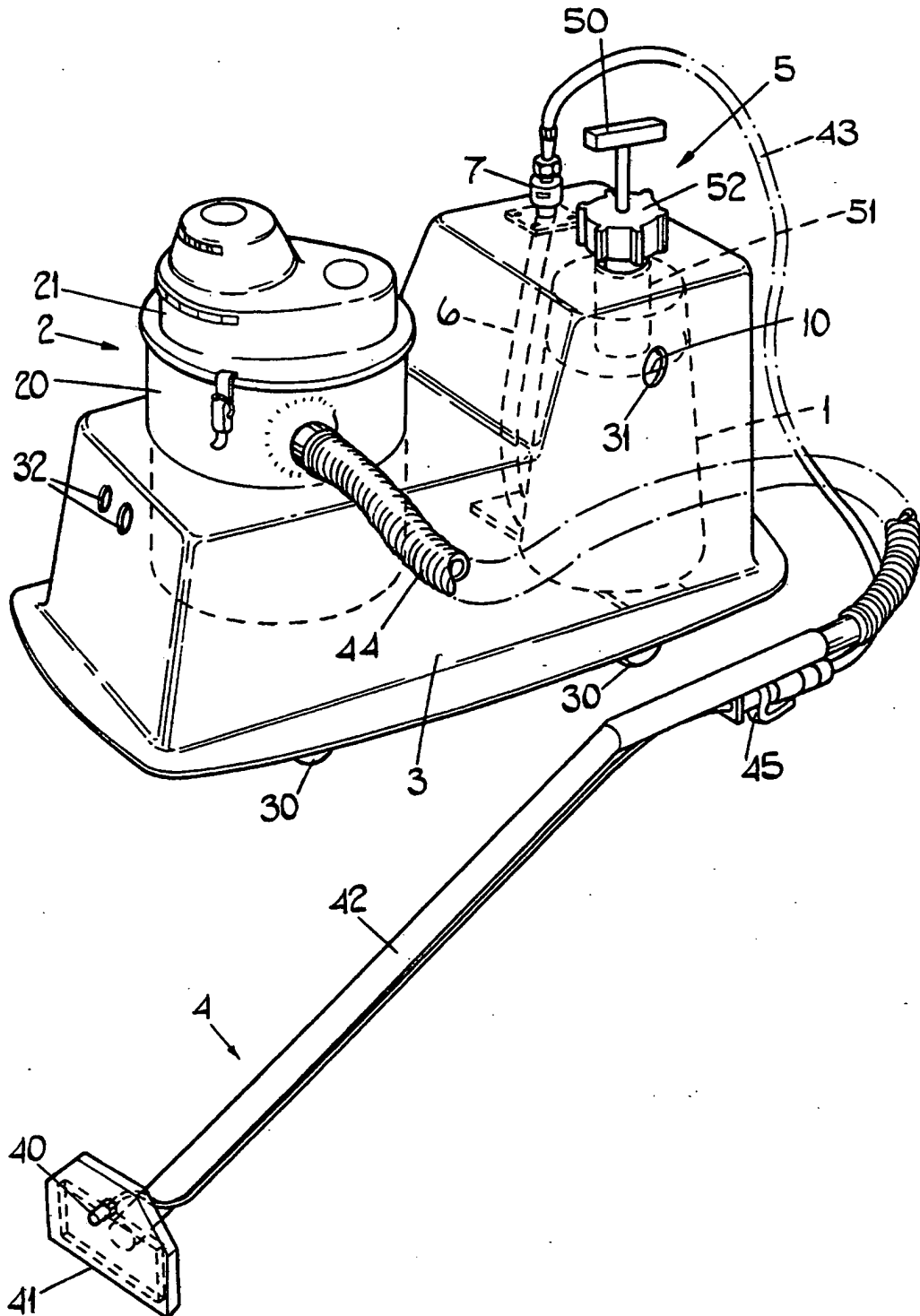


- (21) Application No 7833167  
(22) Date of filing 12 Aug 1978  
(23) Claims filed 6 Aug 1979  
(43) Application published  
20 Feb 1980  
(51) INT CL<sup>7</sup>  
A47L 11/34  
(52) Domestic classification  
A4F 18A1 18F  
(56) Documents cited  
GB 1455477  
GB 1402364  
GB 1288763  
GB 664155  
GB 476084  
GB 362592  
(58) Field of search  
A4F  
(71) Applicant:  
Ronald Ernest Brain,  
79 Lower Eastern Green  
Lane,  
Eastern Green,  
Coventry,  
West Midlands  
(72) Inventor  
Ronald Ernest Brain,  
(74) Agents  
T. Fletcher Wilson

(54) Cleaning apparatus

(57) Cleaning apparatus, e.g. for cleaning carpets or upholstery is provided with a container (1) for cleaning liquid and means such as a hand operated air pump (5) for pressurising the liquid in the container for feed of the liquid under pressure to a cleaning tool (4). The container may be housed in a housing (3) together with a suction unit (2) for drawing up dirty liquid. Alternatively, a motor driven pump or compressor may be provided for pressurising the liquid in the container preferably with pressure responsive cut out control. The liquid in the container may be heated by a thermostatically controlled immersion heater.





## SPECIFICATION

### Cleaning apparatus

5 The object of this invention is to provide simple and effective apparatus for cleaning purposes especially for cleaning carpets, upholstery or the like. Simplicity of operation and use and other practical advantages of the invention will be apparent from the following disclosure.

10 According to this invention cleaning apparatus is characterised by a container for holding cleaning liquid such as a mixture of water and a cleaning agent and means for pressurising the liquid in the container for feed of the liquid under pressure from the container to a cleaning tool.

In practice the construction and arrangement of carpet or upholstery cleaning apparatus embodying the invention may be as follows, reference being had to the accompanying drawing which is a perspective view of the apparatus together with a cleaning tool.

The apparatus comprises basically a container 1 for holding cleaning liquid and having a pressurising means 5 and a vacuum or suction unit 2 which are both shown conveniently accommodated in a housing 3 mounted on castor wheels 30 for mobility. The housing 3 preferably consists of a hollow glass fibre moulding for lightweight and adequate strength and is also shown provided with finger holes 31 (or handles) at each end to facilitate lifting and handling of the apparatus.

The general mode of operation of the apparatus is that cleaning liquid in the form of a mixture of a cleaning agent in water or of other suitable composition is fed under pressure to a cleaning tool 4 for controlled emission from a nozzle 40 of the latter into the surface of a carpet or the like being cleaned, the cleaning tool 4 also having a suction nozzle 41 connected by a hollow handle 42 and hose 44 to the suction unit 2 for immediately drawing the liquid and dirt loosened thereby out of the carpet.

The suction unit 2 may be of any known or suitable kind and consists of a tank 20 for receiving dirt laden liquid drawn from the tool 4 and is provided with a head 21 containing electric motor driven suction means (not visible), the motor of which is normally arranged for mains operation from a convenient power point socket. The suction unit 2 can be readily lifted out of the housing 3 when it is required to empty the tank 20 or change the unit.

For the purpose of this invention the container 1 for cleaning liquid preferably consists of a bottle or vessel of substantially rigid plastics material and may be such that the wall or walls of the container have some degree of resilience. The upper end of the container 1 is provided with a hand operated air pump 5 shown consisting of a cylinder 50 containing a piston (not visible), the lower end of the cylinder 51 communicating with the interior of the container 1 via a non-return valve and preferably by detachable screw cap or other connection 52 with the mouth of the container. A lower part of the container 1 is communicated by a pipe 6 to a self-closing connector valve 7 on the housing 3 to which, in use, a flexible pipe 43 is connected from the cleaning tool 4.

In using the apparatus, a few strokes of the piston rod handle 50 of the pump is sufficient to pressurise the cleaning liquid in the container 1 for feed of the liquid via the pipe work 6, 43 to the cleaning tool 4 on opening operation of the control valve 45 of the latter. While the liquid is being pressurised or immediately thereafter the suction unit 2 is switched on for operation of the tool 4 in the manner already described.

75 Practical tests have established that the liquid can be adequately pressurised in this way for cleaning an area of carpet of the order of five square metres or yards whilst re-pressurising of the liquid can be readily effected by further operation of the air pump 5 as and when necessary.

Prior to use, water and cleaning agent can be mixed in the container 1 by adding the agent to water in the container usually in the ratio of one part of cleaning agent to four parts of water but these proportions may be varied according to requirements.

The container should be filled upto an appropriate level mark 10 shown visible through an opening or window 31 in the housing 3.

As will be apparent from the foregoing the apparatus is extremely simple and convenient to use and only requires plugging into a power point socket together with pressurising of liquid in the container 1 when it is then ready for operation of the cleaning tool 4.

In a development of the apparatus a motor driven air compressor or pump can be provided in place of the hand operated pump 5 shown, the motor being normally arranged for mains operation along with that of the suction unit 2. In such an arrangement the compressor motor is preferably controlled by a switch responsive to pressure in the container 1 for cutting out operation of the compressor in the event of excess air pressure tending to occur in the container.

In a further development provision for heating the liquid in the container such as by a thermostatically controlled mains operated immersion heater may be provided as necessary. Together with the suction unit motor and any compressor motor the immersion heater can be connected to the mains electricity supply by a single plug in connection.

### CLAIMS

1. Cleaning apparatus characterised by a container for holding cleaning liquid such as a mixture of water and a cleaning agent and means for pressurising the liquid in the container for feed of the liquid under pressure from the container to a cleaning tool.

2. Cleaning apparatus according to claim 1 wherein the means for pressurising the liquid in the container consists of a hand operated air pump communicating with the container.

3. Cleaning apparatus according to claim 1 or 2 wherein the means or hand operated air pump is received by the container.

4. Cleaning apparatus comprising support structure or a housing; a container carried by said structure or housing for holding cleaning liquid such as a mixture of water and a cleaning agent; pump or

compressor means for pressurising the liquid in the container for feed of the liquid under pressure from the container to a cleaning tool for emission therefrom onto a surface to be cleaned, and suction means

5 carried by the support structure or housing for connection to a said cleaning tool for drawing up emitted liquid and dirt loosened thereby from a said surface.

5. Cleaning apparatus according to claim 1 or 4

10 wherein motor driven compressor or pump means is provided for pressurising the cleaning liquid in the container.

6. Cleaning apparatus according to claim 5

15 wherein electric motor drive of the compressor or pump means is controlled by a switch responsive to pressure in the container for cutting out operation of the compressor or pump in the event of excess air pressure tending to occur in the container.

7. Cleaning apparatus according to any of the

20 preceding claims wherein means is provided for heating cleaning liquid in the container such as a thermostatically controlled immersion heater.

8. Cleaning apparatus substantially as herein described with reference to the accompanying drawing.

25